

I/WE CLAIM:

1. A lockdown flange for use with an independent screwed wellhead, comprising:

an annular body having an axial passageway with an internal diameter at least as large as a passageway through the wellhead, a bottom surface adapted to be mounted to a top of a casing mandrel in the wellhead, an annular shoulder for supporting a lockdown nut for engaging a pin thread disposed on an external periphery of the wellhead to secure the lockdown flange to the wellhead, and a top flange for secure connection of one of: a flanged adapter pin, a high pressure valve, a well stimulation tool, and a blowout preventer.
2. A lockdown flange as claimed in claim 1 wherein the internal diameter of the axial passageway is greater than that of the passageway through the wellhead, so that a mandrel of a blowout preventer protector can be inserted therein and sealed against an annulus of the lockdown flange.
3. A lockdown flange as claimed in claim 2 wherein the axial passageway comprises an adapter pin chamber for receiving an adapter pin, the adapter pin having an internal diameter equal to that of the casing mandrel, and comprising a pin threaded nipple for adapted to engage a top box thread of the casing mandrel.

4. A lockdown flange as claimed in claim 3 further comprising a pancake gasket that provides a fluid seal in an annular gap between a top of the adapter pin chamber and the top of the adapter pin.
5. A lockdown flange as claimed in claim 4 wherein an outer wall of the adapter pin comprises pin threads for engaging complementary box threads on an interior surface of the adapter pin chamber.
6. A lockdown flange as claimed in claim 4 wherein the adapter pin further comprises a pin sleeve connected to an outer bottom end of the adapter pin, and adapted to be adjustably movable into a seating contact with the top of the casing mandrel to stabilize the adapter pin.
7. A lockdown flange as claimed in claim 1 wherein the top flange comprises peripheral pin threads for engaging box threads of a lockdown nut of a flanged adapter pin that provides a stud pad for supporting the one of: a high pressure valve, a well stimulation tool, and a blowout preventor.
8. A lockdown flange as claimed in claim 7 wherein the flanged adapter pin comprises:
 - an elongated mandrel that extends through the axial passageway of the lockdown flange;
 - a bottom end having a pin threaded nipple for connection to the casing mandrel; and
 - an axial passageway of a same internal diameter as that of the casing mandrel.

9. A lockdown flange as claimed in claim 8 wherein the lockdown nut of the flanged adapter pin is supported by an annular shoulder formed on an outer wall of the elongated mandrel.
10. A lockdown flange as claimed in claim 8 wherein the lockdown nut of the flanged adapter pin is supported by an annular shoulder of a top flanged surface that comprises the stud pad.
11. A lockdown flange as claimed in claim 10 wherein an interior wall of the lockdown flange comprises annular grooves for supporting seals to prevent fluid from escaping the axial passageway between the lockdown flange and the flanged adapter pin.
12. A lockdown flange as claimed in claim 11 wherein the flanged adapter pin further comprises a pin sleeve connected to the adapter pin, the pin sleeve being adapted to be moved into seating contact with the top of the casing mandrel, to stabilize the adapter pin.
13. A lockdown flange as claimed in claim 12 wherein the flanged adapter pin comprises two separable pieces, an adapter pin comprising the nipple, and a flanged coupler, the two pieces being connected together by pin and box threads.
14. A multi-lock adapter for a flanged adapter pin for an independent screwed wellhead, comprising:

an adapter pin having a pin threaded nipple for engaging top box threads in a central passage of a casing mandrel of the wellhead;

a lockdown flange for locking the adapter pin to the independent screwed wellhead;

a lockdown nut for locking the lockdown flange to the independent screwed wellhead; and

means for interconnecting the adapter pin and the lockdown flange.

15. The multi-lock adapter as claimed in claim 14 wherein the means for interconnecting the adapter pin and the lockdown flange comprises a top lockdown nut supported by an annular shoulder on a top flange of the adapter pin, and a pin thread on a top flange of the lockdown flange engaged by a box thread of the top lockdown nut.
16. The multi-lock adapter as claimed in claim 14 wherein the means for interconnecting the adapter pin and the lockdown flange comprises an annular shoulder on an outer periphery of a mandrel of the adapter pin, the annular shoulder supporting a top lockdown nut, and a pin thread on a top of the lockdown flange engaged by a box thread of the top lockdown nut.
17. The multi-lock adapter as claimed in claim 14 wherein the means for interconnecting the adapter pin and the lockdown flange comprises an adapter pin chamber in a bottom of an axial passage of the lockdown flange, the adapter pin chamber including box threads that engage pin threads on an outer periphery of the adapter pin.
18. The multi-lock adapter as claimed in claim 17 further comprising a pin sleeve that threadedly engages pin

threads on an outer periphery of the pin adapter, and is adjustably movable to position in which the pin sleeve sits securely on a top surface of the casing mandrel.

19. A multi-lock adapter as claimed in claim 18 further comprising a pancake gasket between a top of the adapter pin and a top of the adapter pin chamber.

20. A multi-lock adapter as claimed in claim 19 further comprising fluid seals located between an outer periphery of the pin adapter and the adapter pin chamber.

21. A method for stimulating a well equipped with an independent screwed wellhead, in order to complete or re-complete the well, comprising:

mounting a multi-lock adapter to the independent screwed wellhead;

mounting one of a high pressure valve, a blowout preventer and a well stimulation tool to a top flange of the multi-lock adapter; and

pumping high pressure fluid through the one of the high pressure valve, the blowout preventer and the well stimulation tool.

22. The method as claimed in claim 21 wherein mounting the multi-lock adapter to the independent screwed wellhead comprises:

screwing a threaded nipple on a bottom of the pin adapter into top box threads in casing mandrel of the independent screwed wellhead;

mounting a lockdown flange over the adapter pin; and
locking the lockdown flange to the independent
screwed wellhead using a lockdown nut that
engages a pin thread on an outer periphery of the
independent screwed wellhead.

23. The method as claimed in claim 21 wherein mounting the multi-lock adapter to the independent screwed wellhead comprises:

mounting a lockdown flange to the independent screwed wellhead;

locking the lockdown flange to the independent screwed wellhead using a lockdown nut that engages a pin thread on an outer periphery of the independent screwed wellhead;

inserting a mandrel of a flanged adapter pin through an axial passage in the lockdown flange; and

screwing a threaded nipple on a bottom of the pin adapter into top box threads in casing mandrel of the independent screwed wellhead.

24. A method for stimulating a well equipped with an independent screwed wellhead, in order to complete or re-complete the well, comprising:

mounting a lockdown flange to the independent screwed wellhead, the lockdown flange having an axial passage of a larger diameter than an axial passage through a casing mandrel of the independent screwed wellhead;

mounting one of a blowout preventer a top flange of the lockdown flange;

mounting a blowout preventer protector to a top of the blowout preventer;

stroking the blowout preventer protector through the blowout preventer and into a high-pressure fluid sealing contact with the axial passage through the lockdown flange; and

pumping high pressure fluid through the blowout preventer protector and into a casing of the well.